

Translation

PATENT COOPERATION TREATY

PCT/JP2003/004308



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference G102027WO	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/JP2003/004308	International filing date (day/month/year) 03 April 2003 (03.04.2003)	Priority date (day/month/year) 28 June 2002 (28.06.2002)
International Patent Classification (IPC) or national classification and IPC C07C 313/08, C07B 59/00, G01N 33/68, 27/62, A61K 38/00		
Applicant SHIMADZU CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 12 September 2003 (12.09.2003)	Date of completion of this report 14 May 2004 (14.05.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/004308

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP03/04308

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	10-45	YES
	Claims	1-9	NO
Inventive step (IS)	Claims	10, 20, 32	YES
	Claims	1-9, 11-19, 21-31, 33-45	NO
Industrial applicability (IA)	Claims	1-45	YES
	Claims		NO

**2. Citations and explanations**

Document 1: Journal of Organic Chemistry, 1994, Vol. 59, No. 12, pages 3294-3300  
Document 2: Journal of Organic Chemistry, 1991, Vol. 56, No. 23, pages 6638-6643  
Document 3: Bulletin of the Chemical Society of Japan, 1986, Vol. 59, No. 10, pages 3291-3292  
Document 4: Chemische Berichte, 1982, Vol. 115, No. 12, pages 3719-3736  
Document 5: Journal of Organic Chemistry, 1979, Vol. 44, No. 23, pages 4135-4140  
Document 6: Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy, 1995, Vol. 51A, No. 14, pages 2447-2451  
Document 7: Journal of Labelled Compounds and Radiopharmaceuticals, 1983, Vol. 20, No. 11, pages 1243-1256  
Document 8: WO, 00-11208, A1 (University of Washington), 2 March, 2000 (02.03.00)  
Document 9: "Proteins IV: Correlation between Structures and Functions (in Japanese)," The Japan Biochemical Society, Tokyo Kagaku Dozin Co., Ltd., 1991, No. 57-58, pages 64-66

**Claims 1-9**

The subject matters of these claims do not appear to be novel or to involve an inventive step in view of documents 1-7 cited in the ISR. Documents 1-7 respectively describe a sulfenyl halide composed of organic groups having a constituent element labeled with an isotope.

**Claims 1-9, 11-19, 21-31 and 33-45**

The subject matters of these claims do not appear to involve an inventive step in view of documents 1-9 Cited in the ISR.

Document 8 describes a method for analyzing a protein comprising the steps of (1) labeling the protein using a reagent labeled with an isotope and (2) analyzing it by means of mass spectrometry, and document 9 describes an aryl sulfenyl chloride as a specific modifier of the tryptophan residue of a protein. So, a person skilled in the art could have easily conceived of analyzing a peptide using the isotope-labeled aryl sulfenyl chloride described in documents 1-7 as a labeling reagent.

**Claims 10, 20 and 32**

The subject matters of these claims appear to be novel and to involve an inventive step in view of documents 1-9 cited in the ISR.

The subject matters of claims 10, 20 and 32 are neither described in documents 1-9 nor could have been easily conceived of from the descriptions of documents 1-9.